

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte KENNETH G. MAXWELL, JEFFREY A. MILLINGTON  
and ANTHONY A. SLOMINSKI

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Appeal No. 2002-0662  
Application No. 09/099,963

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ON BRIEF

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Before COHEN, ABRAMS, and NASE, Administrative Patent Judges.  
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 to 24, which are all of the claims pending in this application.

We AFFIRM-IN-PART.

### BACKGROUND

The appellants' invention relates to a navigation system with a vehicle location display for showing a vehicle's current location and the location of the desired route (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Fast	5,497,149	March 5, 1996
Ayanoglu et al. (Ayanoglu)	5,689,252	Nov. 18, 1997
Endo et al. (Endo)	5,902,349	May 11, 1999

Claims 1, 3, 4, 6, 7, 9 to 11, 13 to 15, 17 to 19 and 21 to 24 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ayanoglu in view of Fast.

Claims 2, 5, 8, 12, 16 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ayanoglu in view of Fast and Endo.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answer (Paper No. 20, mailed October 12, 2001) for the examiner's complete reasoning in

support of the rejections, and to the brief (Paper No. 19, filed August 13, 2001) and reply brief (Paper No. 21, filed January 17, 2002) for the appellants' arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. Upon evaluation of all the evidence before us, it is our conclusion that the evidence adduced by the examiner is sufficient to establish a case of obviousness only with respect to claims 1, 3, 4, 6, 7, 9, 13 to 15, 17, 21, 23 and 24. Accordingly, we will sustain the examiner's rejection of claims 1, 3, 4, 6, 7, 9, 13 to 15, 17, 21, 23 and 24 under 35 U.S.C. § 103. We will not sustain the examiner's rejection of claims 2, 5, 8, 10 to 12, 16, 18 to 20 and 23 under 35 U.S.C. § 103. Our reasoning for this determination follows.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the

proposed combination or other modification. See In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on 35 U.S.C. § 103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

With this as background, we analyze the prior art applied by the examiner in the rejection of the claims on appeal.

### **Ayanoglu**

Ayanoglu's invention relates to a navigation system for an automotive vehicle and, more particularly, to an improvement for determining a navigation route from the

current position of an automotive vehicle to a given destination. Figure 1 of Ayanoglu illustrates a block diagram of a navigation system 10 including a global positioning system (GPS) receiver 26 for approximating the actual position of an automotive vehicle 70 (Figure 2). The navigation system 10 includes a microcontroller 22, and a cathode ray tube (CRT) 20 coupled to the microcontroller 22 adapted to display images for navigation of an automotive vehicle 70. An input source 25, preferably in the configuration of a keyboard (not shown), is coupled to microcontroller 22 to enable driver input into the system 10 (e.g., to enable a driver to designate a destination while viewing the CRT 20 or input a desired traveling route). The system 10 further preferably includes a conventional CD-ROM (compact disc read only memory) 24 coupled to the microcontroller 22. The CD-ROM 24 is adapted to store various road map information classified in accordance with selected geographical regions.

The GPS receiver 26 is coupled to the microcontroller 22 and is adapted to receive positioning signals, via antenna 27, from GPS satellites 29, 31 and 33 so as to enable the approximation of the actual position of the automotive vehicle. Preferably, the microcontroller 22 is coupled to both a direction sensor 28 for detecting the direction of travel of the automotive vehicle, and a distance sensor 30 for measuring the traveling distance of the automotive vehicle to assist in the approximation of the actual position of the automotive vehicle.

The microcontroller 22 is coupled to a processing unit 34 which is adapted to read a road map related to a geographical region in which the automotive vehicle is currently traveling from the CD-ROM 24 on the basis of the current position of the automotive vehicle as detected by the GPS receiver 26. Preferably, each stored road map is converted into a data structure wherein a street map includes at least two fields including the speed and length of each route stored thereon. The microcontroller 22 is adapted to then display the actual position of the automotive vehicle overlapped with an appropriate road map on the display screen of the CRT 20. The processing unit 34 is further adapted to calculate the best route to a selected destination on the basis of the travel length and traffic speed of individual routes, as discussed in detail in the patent.

The method of determining a best route is illustrated in the schematic of Figure 3. The user (e.g., the operator of the automotive vehicle) first activates the best route program, block 100, by inputting appropriate information into the input source 24. The user then inputs, via the input source 25, a particular desired destination, block 110. The microcontroller 22 then retrieves "the current position" of the automotive vehicle from the GPS receiver 26, block 120. The system 10 next identifies the navigation routes available for travel between "the current position" of the automotive vehicle and the aforementioned desired destination and identifies the best route, blocks 130-170.

The best route identified by Ayanoglu's system is then displayed on the display screen of the CRT 20.

## **Fast**

Fast discloses a system for determining the position of an object to be protected using a local or global positioning system and issuing messages to a monitoring message center at predetermined times and/or at times when the object to be protected is under an alert condition, such as being outside an allowed position zone during a defined time period. The object protection system of Fast's invention comprises two major components: a security beacon and a programming/monitoring terminal. The security beacon contains a global positioning system (GPS) receiver. This receiver determines its own location from information it receives from satellites. The security beacon also contains a cellular telephone designed to transmit and receive data. The security beacon is attached to a person and is fitted in such a way that it can not be removed except with a key. The monitoring/programming terminal is essentially a computer containing a telephone modem.

The security beacon can be used to issue warning notices if a person to be protected leaves a protected zone or enters a forbidden zone or for house arrest and restraining order enforcement. The beacon to be worn by the person to be protected is

to be programmed by connecting it to the monitoring/programming terminal. The personal data of the wearer are stored in the beacon memory. A series of zone programs are downloaded from the terminal. These zone programs contain data defining the areas in which the wearer may be and those areas which the wearer is not to enter.

A mobile terminal is Fast's preferred primary terminal. It consists of a cellular phone, a global positioning system (GPS) receiver, and a computer with keypad to allow beacon programming. It can display on its screen a map layout, and it has the capability for automatic scaling of the map to display simultaneously its own position and the position of the beacon on the same map. Fast teaches (column 5, lines 23-30) that

[a]utomatic scaling of the displayed map and determination of the position of the mobile terminal on the map provides for easy tracking of a person or object wearing the beacon, even while the terminal and the beacon are moving. Automatic scaling and position determination of the mobile terminal and the beacon eliminate the need for interpretation of map coordinates and manual control of scaling and panning of the displayed map.

## **Endo**

Endo discloses a navigation apparatus which can search out, even if a vehicle goes off of a guide route, a route which allows the vehicle to return to the guide route so

that the travel distance to a destination may be comparatively short. A guide route control unit calculates, when the vehicle is in an off-route condition (i.e., the vehicle is no longer on the guide route), rectilinear distances from a vehicle position to nodes on the guide route and route distances from the nodes to the destination along the guide route. The control unit modifies the rectilinear distances and the route distances using first and second weighting coefficients, respectively, which are set so that the second weighting coefficient is greater than the first weighting coefficient, and calculates sums of the rectilinear and route distances modified with the first and second weighting coefficients, respectively. The control unit then determines one of the nodes which exhibits the lowest one of the sums as a return point, and searches for a route from the vehicle position to the return point. The navigation apparatus guides the vehicle to the return point along the route thus searched out.

### **The rejections under 35 U.S.C. § 103**

Claims 1, 3, 4, 6, 7, 9 to 11, 13 to 15, 17 to 19 and 21 to 24 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ayanoglu in view of Fast. In this rejection (answer, pp. 3-5), the examiner determined that (1) Ayanoglu does not specifically disclose automatic scaling of the display for the navigation system; and (2) it would have been obvious to one of ordinary skill in the art at the time the invention was made

to modify the system of Ayanoglu by scaling the map to simultaneously display the position along with the route in view of the teachings of Fast.

Claims 2, 5, 8, 12, 16 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ayanoglu in view of Fast as modified above, and further in view of Endo. In this rejection (answer, pp. 5-6), the examiner further determined that (1) Ayanoglu does not disclose a means for determining a distance from a position to the route and to display the distance; and (2) it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Ayanoglu by determining the distance from the position so that the navigation system can search for a route so that the travel distance to the destination may be comparatively short in view of the teachings of Endo.

### **Grouping of claims**

In the brief (pp. 3-4), the appellants have provided nine claim groupings as follows: (1) Claims 1, 7, 14, 15 and 21; (2) Claim 3; (3) Claims 2, 8 and 16; (4) Claims 4, 9 and 17; (5) Claims 5, 12 and 20; (6) Claim 6; (7) Claims 10, 11, 18, 19 and 22; (8) Claim 13; and (9) Claims 23 and 24.

**Claims 1, 7, 14, 15 and 21**

We sustain the rejection of claims 1, 7, 14, 15 and 21 under 35 U.S.C. § 103.

Claim 1 reads as follows:

A navigation system comprising:  
a database of roads;  
a system for determining a position of the navigation system relative to the database;  
a system for determining a route to a destination in said database; [and]  
a display for displaying said route and said position, said display automatically scaling said display to include said route and said position.

The appellants' argue that there is no teaching or suggestion in Ayanoglu of a subsequent determination of current vehicle position in relation to the recommended route since the "current" or "actual" position of the vehicle utilized in Ayanoglu is determined prior to the calculation of the recommended route. The appellants then point out that Fast would not have suggested displaying both the route and the current vehicle position. The appellants admit (brief, pp. 5-6) that based on the teachings of Fast, the initial position of the vehicle prior to route determination (Ayanoglu's "current position depicted in block 120 of Figure 3) and the destination point would be automatically scaled to be simultaneously displayed.

We agree with the appellants that the teachings of Fast would have suggested that both the initial position of the vehicle prior to route determination (Ayanoglu's "current position depicted in block 120 of Figure 3) and the destination point be automatically scaled to be simultaneously displayed and that the current vehicle position may not be included in such display. However, contrary to the argument of the appellants, claim 1 does not recite that the current vehicle position be included in the display. Claim 1 requires that (1) a system determine both "a position of the navigation system relative to the database" and a route to a destination; and (2) a display automatically being scaled to display the route and the position. Thus, claim 1 is readable on the teachings of Ayanoglu and Fast as combined by the examiner since the system of Ayanoglu as modified by the teachings of Fast would determine both a position of the navigation system relative to the database (the initial position of the vehicle prior to route determination, the current position depicted in block 120 of Ayanoglu's Figure 3) and a route to a destination (depicted in block 170 of Ayanoglu's Figure 3) and then automatically scale the display to include the route to the destination point and the position (the initial position of the vehicle prior to route determination and thus the initial point of the determined route).<sup>1</sup>

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<sup>1</sup> In fact, it appears to us that claim 1 is probably anticipated by Ayanoglu and the admitted prior art discussed on pages 1-2 of the specification. This admitted prior art states that the typical navigation system provides a guidance mode map showing the starting point, desired destination, current location and highlights the recommended route.

For the reasons set forth above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 103 is affirmed. In view of the appellants above-noted grouping of claims, claims 7, 14, 15 and 21 fall with claim 1. Thus, it follows that the decision of the examiner to reject claims 7, 14, 15 and 21 under 35 U.S.C. § 103 is also affirmed.

### **Claim 3**

We sustain the rejection of claim 3 under 35 U.S.C. § 103.

Claim 3 reads as follows:

A navigation system of Claim 1, wherein said position includes at least a first position and a second position, said system for determining said route based on said first position and said display being automatically scaled to display said route and said second position, said first position being different than said second position.

The appellants argue that Ayanoglu does not teach or suggest a determination of a second vehicle position or a subsequent determination of vehicle position in relation to the recommended route after the route has been determined. The appellants also assert that the destination point is not a determination of a second vehicle position after the best route has been determined.

In our view, claim 3 is readable on the teachings of Ayanoglu and Fast as combined by the examiner since the modified system of Ayanoglu would automatically scale the display to include the destination point, the starting position determined by the GPS receiver and the route therebetween. In that regard, it is our determination that claim 3 does not require both the first and second positions to be determined by the navigation system. Instead, claim 3 requires only that one of the first and second positions to be determined by the navigation system. Thus, the claimed second position is readable on the destination point. Additionally, even if claim 3 were interpreted to require both the first and second positions to be determined by the navigation system it is our view that such would be inherently met by the modified system of Ayanoglu when the current position depicted in block 120 of Ayanoglu's Figure 3 is a fixed position (e.g., the vehicle is stopped to determine a route) and the route to the destination is displayed prior to moving the stopped vehicle and then the vehicle proceeds along the route and the GPS receiver would track the progress of the vehicle along the route.

For the reasons set forth above, the decision of the examiner to reject claim 3 under 35 U.S.C. § 103 is affirmed.

**Claims 4, 9 and 17**

We sustain the rejection of claims 4, 9 and 17 under 35 U.S.C. § 103.

Claim 4 reads as follows:

A navigation system of Claim 3, wherein said first position is a location of a vehicle when said destination is selected and said second position is a location of the vehicle when said system for determining said route has completed determining said route to said destination.

The appellants argue that Ayanoglu does not teach or suggest a subsequent determination of a current vehicle position in relation to the recommended route or the display showing both the current vehicle position and the recommended route.

In our view, claim 4 would be inherently met by the modified system of Ayanoglu when the position depicted in block 120 of Ayanoglu's Figure 3 is close to the current vehicle position so that when the route is displayed the current vehicle position being tracked by the GPS receiver would be displayed along with the route.

For the reasons set forth above, the decision of the examiner to reject claim 4 under 35 U.S.C. § 103 is affirmed. In view of the appellants above-noted grouping of claims, claims 9 and 17 fall with claim 4. Thus, it follows that the decision of the examiner to reject claims 9 and 17 under 35 U.S.C. § 103 is also affirmed.

## **Claim 6**

We sustain the rejection of claim 6 under 35 U.S.C. § 103.

Claim 6 reads as follows:

A navigation system of Claim 3 further wherein said second position is not on said route.

The appellants argue that Ayanoglu does not teach or suggest a subsequent determination of a current vehicle position that is not on the route.

In our view, claim 6, like claim 4, would be inherently met by the modified system of Ayanoglu when the position depicted in block 120 of Ayanoglu's Figure 3 is close to the current vehicle position so that when the route is displayed the current vehicle position being tracked by the GPS receiver would be displayed along with the route. When the current vehicle position is not on the route but close to the route (as would be the case in some instances) it would be displayed along with the route.

For the reasons set forth above, the decision of the examiner to reject claim 6 under 35 U.S.C. § 103 is affirmed.

### **Claim 13**

We sustain the rejection of claim 13 under 35 U.S.C. § 103.

Claims 7 and 13 read as follows:

7. A method for automatically scaling a display for a navigation system including the steps of:  
(a) determining a first position of the display relative to a database of roads;  
(b) selecting a destination in the database;  
(c) calculating a route to the destination in the database;  
(d) calculating a map scale including said route and said first position; and  
(e) displaying said route and said first position based on said map scale.

13. The method of Claim 7 further including the steps of (f) displaying at a first map scale prior to said step (e), and (g) displaying at a second map scale different from said first map scale during said step (e).

The appellants argue that the applied prior art does not teach or suggest displaying at a first map scale prior to the route determination and displaying at a different map scale after the route determination.

In our view, claim 13 would be inherently met by the modified system of Ayanoglu since prior to route determination the navigation system would be displaying the vehicle's current position on a grid (i.e., a first map scale) and after the route determination the grid is changed to display the entire route including the destination

point and the initial point of the determined route (i.e., a second map scale different from the first map scale so that the entire route is displayed).

For the reasons set forth above, the decision of the examiner to reject claim 13 under 35 U.S.C. § 103 is affirmed.

#### **Claims 23 and 24**

We sustain the rejection of claims 23 and 24 under 35 U.S.C. § 103.

Claim 23 reads as follows:

A method for automatically scaling a display for a navigation system including the steps of:  
    repeatedly determining a position of the navigation system relative to a database of roads;  
    determining a route in the database of roads;  
    selecting a location in the database of roads;  
    repeatedly determining a map scale which would ensure that the position of the navigation system and the location can both be displayed simultaneously;  
and  
    displaying the position of the navigation system and the location on a map at the determined scales, insuring that the position of the navigation system and the location are both displayed simultaneously.

The appellants argue that the applied prior art does not teach or suggest either (1) repeatedly determining the position of the navigation system; or (2) repeatedly determining a map scale.

In our view, claim 23 is met by the modified system of Ayanoglu since a GPS navigation system as taught Ayanoglu would inherently be repeatedly determining the position of the navigation system and thus displaying the current vehicle position on a selected map and repeatedly determining the map scale as the vehicle proceeds along a route.

For the reasons set forth above, the decision of the examiner to reject claim 23 under 35 U.S.C. § 103 is affirmed. In view of the appellants above-noted grouping of claims, claim 24 falls with claim 23. Thus, it follows that the decision of the examiner to reject claim 24 under 35 U.S.C. § 103 is also affirmed.

### **Claims 2, 8 and 16**

We will not sustain the rejection of claims 2, 8 and 16 under 35 U.S.C. § 103.

Claims 2, 8 and 16 add to their respective parent claims the further limitation that the navigation system determines a distance from the position to the route and that the display displays the distance.

The appellants argue that there is no teaching or suggestion in Endo or the other applied references (i.e., Ayanoglu and Fast) of displaying a distance from the position

to the route. We agree. In fact, in the rejection of these claims, the examiner ascertained that Ayanoglu did not teach the claimed displaying a distance from the position to the route but never determined that it would have been obvious at the time the invention was made to a person of ordinary skill in the art to have modified Ayanoglu to display a distance from the position to the route. Accordingly, a case of obviousness of the subject matter of claims 2, 8 and 16 has not been established by the examiner. Additionally, the examiner's reference to the distance sensor 30 of Ayanoglu (answer, p. 7) is misplaced since that sensor measures the traveling distance, not the distance from the position to the route, and does not display the traveled distance.

For the reasons set forth above, the decision of the examiner to reject claims 2, 8 and 16 under 35 U.S.C. § 103 is reversed.

**Claims 10, 11, 18, 19 and 22**

We will not sustain the rejection of claims 10, 11, 18, 19 and 22 under 35 U.S.C. § 103.

Claims 10, 11, 18, 19 and 22 add to their respective parent claims the further limitation that the navigation system determines the route based on the first position and calculates the map scale based on the second position.

The appellants argue that there is no teaching or suggestion in the applied references (i.e., Ayanoglu and Fast) of scaling a display to include the route and a second vehicle position determined after the route has been calculated. We agree. In that regard, while we believe the subject matter of claims 3, 4 and 6 would have been obvious at the time the invention was made to a person of ordinary skill in the art for the reasons set forth above, claims 10, 11, 18, 19 and 22 require the scaling of the map to be based on the second position and the calculated route while the applied prior art only teaches and suggests the scaling of the map to be based on either (1) the current vehicle location or (2) the route. Thus, a case of obviousness of the subject matter of these claims has not been established by the examiner.

For the reasons set forth above, the decision of the examiner to reject claims 10, 11, 18, 19 and 22 under 35 U.S.C. § 103 is reversed.

#### **Claims 5, 12 and 20**

We will not sustain the rejection of claims 5, 12 and 20 under 35 U.S.C. § 103.

Claims 12 and 20 depend from claims 11 and 19 respectively. Thus, the decision of the examiner to reject claims 12 and 20 under 35 U.S.C. § 103 is reversed for the reasons set forth above with respect to claims 11 and 19.<sup>2</sup>

Claim 5 adds to its parent claim the further limitation that the navigation system determines a distance from the position to the route and that the display displays the distance. For the reasons set forth above with respect to claims 2, 8 and 16, the decision of the examiner to reject claim 5 under 35 U.S.C. § 103 is reversed.

### CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 3, 4, 6, 7, 9, 13 to 15, 17, 21, 23 and 24 under 35 U.S.C. § 103 is affirmed and the decision of the examiner to reject claims 2, 5, 8, 10 to 12, 16, 18 to 20 and 23 under 35 U.S.C. § 103 is reversed.

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<sup>2</sup> In addition, the limitations of claims 12 and 20 are not taught or suggested by the applied prior art for the reasons set forth above with respect to claims 2, 8 and 16.

No time period for taking any subsequent action in connection with this appeal  
may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

IRWIN CHARLES COHEN  
Administrative Patent Judge

NEAL E. ABRAMS  
Administrative Patent Judge

JEFFREY V. NASE  
Administrative Patent Judge

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